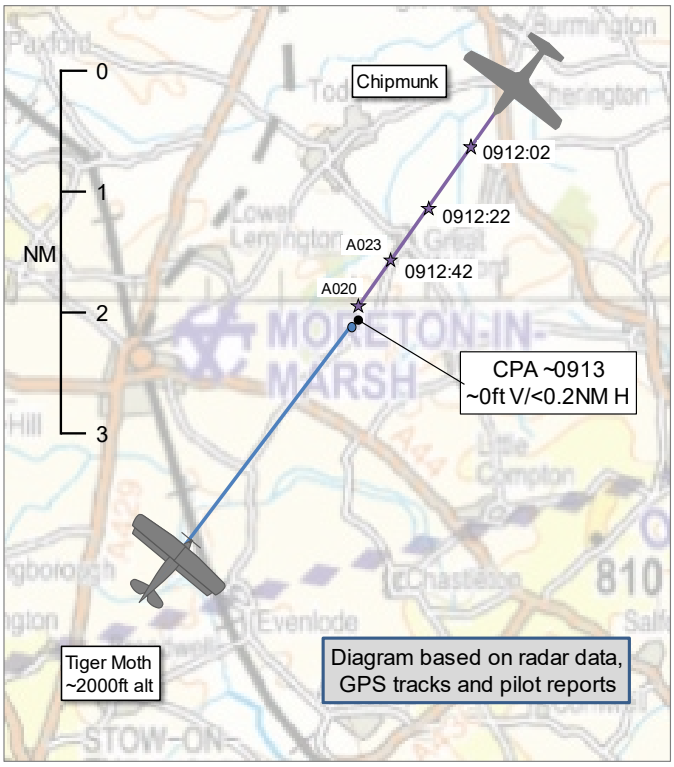
AIRPROX REPORT No 2024061

Date: 24 Apr 2024 Time: ~0913Z Position: 5159N 00139W Location: 2NM E of Moreton-in-Marsh

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	Tiger Moth	Chipmunk
Operator	Civ FW	Civ FW
Airspace	London FIR	London FIR
Class	G	G
Rules	VFR	VFR
Service	None	Listening Out
Provider	N/A	Brize Norton
Altitude/FL	~2000ft	2000ft
Transponder	Off	A, C, S
Reported		
Colours	Camouflage	Grey/Red
Lighting	None	None
Conditions	VMC	VMC
Visibility	>10km	5-10km
Altitude/FL	2000ft	2000ft
Altimeter	QNH (1018hPa)	QNH (NK)
Heading	030°	200°
Speed	75kt	90kt
ACAS/TAS	Not fitted	Not fitted
Separation at CPA		
Reported	0ft V/100m H	NK V/NK H
Recorded	~0ft V/<0.2NM H	



THE TIGER MOTH PILOT reports that they were flying at an altitude of 2000ft heading 030°. They were navigating towards [their destination]. Using Moreton-in-Marsh disused airfield as a waypoint, they were confirming their position when they spotted a silver and red Chipmunk in their 1 o'clock [position], with right bank on, crossing in front at a distance of approximately 100m. They believed this aircraft was taking wholly appropriate action to avoid a collision. They also banked to the right to cross behind. They could only assume that the two aircraft were on a perfect closing angle so there was no movement relative to the horizon nor background, and action was taken at the 'blooming effect'. After crossing, it appeared that the Chipmunk turned left to continue on its original course.

The pilot assessed the risk of collision as 'High'.

THE CHIPMUNK PILOT reports that they were flying below the cloudbase (which was approximately 2500-3000ft QNH) on Brize Norton's Listening Squawk. They started to descend to avoid a cloud on their track that was lower than the surrounding clouds. As they descended, another aircraft came into view, so they immediately took avoiding action by turning to the right. They could see that the other aircraft was a Tiger Moth. They reversed their turn, to observe the other aircraft, and it seemed to them that the other aircraft had continued on its track without avoiding action. Shortly after this incident the Brize Norton [controller] contacted them on the radio asking if they were on frequency, They replied and [the controller] said that there may be circuit conflict, but it was resolved now. They stated that they were at no point in Brize Norton's MATZ [sic].

The pilot assessed the risk of collision as 'Medium'.

THE BRIZE NORTON CONTROLLER reports that [callsign], a Tiger Moth and [callsign], a Chipmunk were both in the vicinity 2NM east of Moreton-in-Marsh at approximately 2000ft. An Airprox occurred but was not declared on the Brize Norton frequency as neither aircraft was being controlled by a Brize Norton controller.

On further considering the 'circuit conflict' call received by the pilot of the Chipmunk, the Brize Norton controller compounded the radar picture at the time the pilot squawked the Brize Norton listening squawk to 2-3 minutes after the point of confliction and stated that there were no traffic calls made to the pilot. However, they also reported that the timeframe for collecting recorded data had expired and they could not confirm if there was a call made later on.

The controller perceived the severity of the incident as 'Low'.

THE BRIZE NORTON SUPERVISOR report reiterated that the aircraft were not under a service from Terminal Air Traffic Control Centre South (TATCC(S)) ATC. One aircraft was on a Brize Norton listening squawk of 3727, however, nothing was declared on the Brize LARS frequency.

Factual Background

The weather at Brize Norton was recorded as follows:

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METAR EGVN 240850Z 02005KT 9999 FEW022 BKN035 07/02 Q1018 NOSIG RMK BLU
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Analysis and Investigation

Brize Norton ATC

The ricochet[1] tapes were reviewed and the controller was interviewed. The controller was not in 2-way communication with either of the aircraft as they were not controlling them. The ricochet tapes revealed that one of the aircraft was squawking 3727 (Brize Norton Listening Squawk (BZL)) with no Mode C and the other aircraft was a primary-only contact with no WAM data. From the recording, they could not identify which aircraft was on the Brize Norton Listening Squawk. An Airprox was not declared on frequency.

UKAB Secretariat

An analysis of the NATS radar replay was undertaken where the Chipmunk was positively identified by reference to Mode S data, indicating a Mode C altitude of 2000ft and a Brize listening squawk of 3727. The Tiger Moth was unseen on radar with the transponder reportedly turned off (Figure 1).

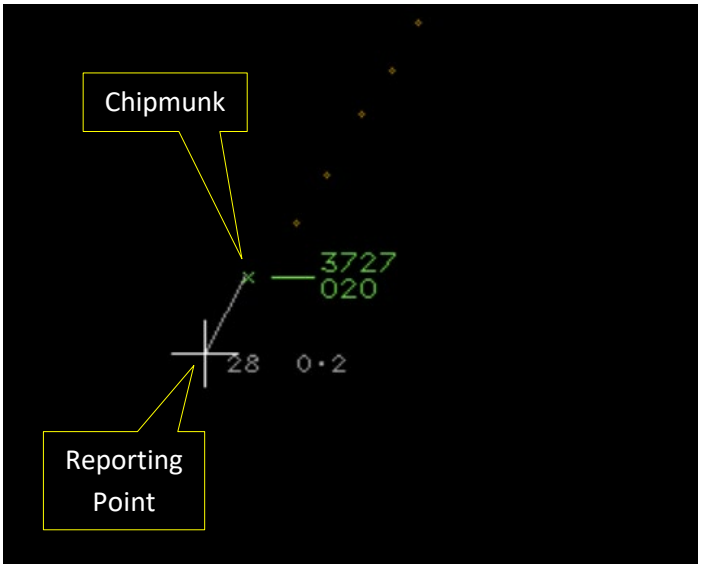

Figure 1 - Time 0912:59. Reporting point 2NM east of Moreton-In-Marsh Airfield

A GPS track was provided by the Tiger Moth pilot, including track times. This shows the Tiger Moth passing abeam Moreton-In-Marsh disused airfield at a GPS log time of 0912 (Figure 2). The

[1] Ricochet is a system used by ATC units to record radar and RT data.

diagram at the top of this report was compiled by comparing the two data sources. CPA was at approximately 0913.

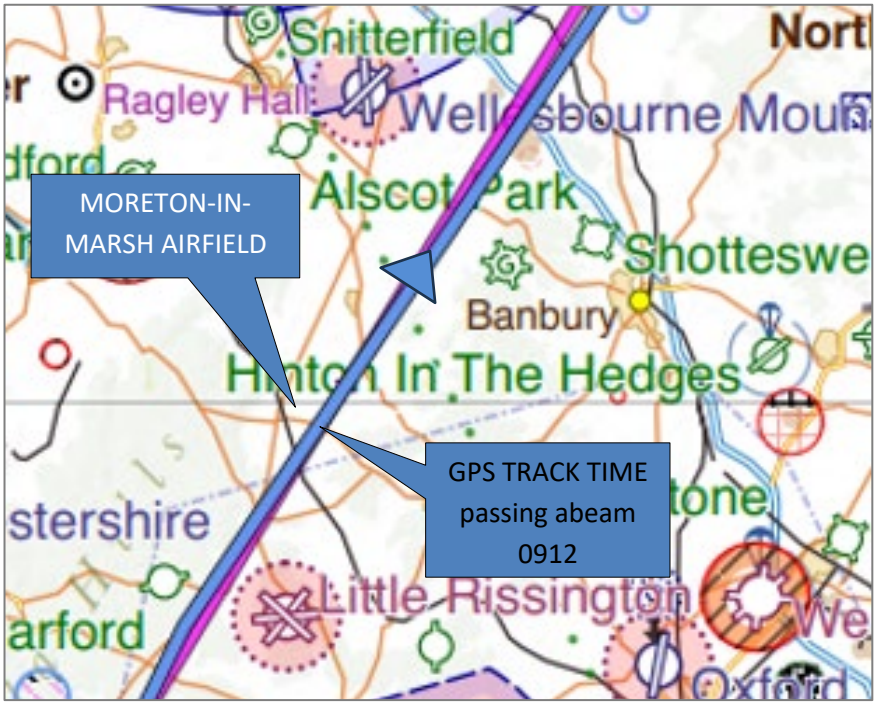

Figure 2 - GPS track for Tiger Moth passing Moreton-in-Marsh Airfield

The Tiger Moth and Chipmunk pilots shared an equal responsibility for collision avoidance and not to operate in such proximity to other aircraft as to create a collision hazard.[2] If the incident geometry is considered as head-on or nearly so then both pilots were required to turn to the right.[3]

Comments

2 Gp BM Analysis

The Brize Norton Frequency Monitoring Code is a well-established facility with clear explanation provided within the UK Civilian AIP to state that an Air Traffic Service is not provided. The Brize Norton controller had no contribution to the Airprox event.

Summary

An Airprox was reported when a Tiger Moth and a Chipmunk flew into proximity 2NM east of Moreton-in-Marsh at around 0913Z on Wednesday 24th April 2024. Both pilots were operating under VFR in VMC, neither the Tiger Moth pilot nor the Chipmunk pilot were in receipt of an ATS.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available consisted of reports from both pilots, GPS tracks, radar photographs/video recordings, reports from the air traffic controllers involved and reports from the appropriate operating authorities. Relevant contributory factors mentioned during the Board's discussions are highlighted within the text in bold, with the numbers referring to the Contributory Factors table displayed in Part C.

The Board first discussed the benefits of making use of an ATS, noting that the Chipmunk pilot's selection of a Brize Norton listening squawk had not served to provide them with such a service, and that the lack of selection of an ATS for the Tiger Moth pilot had compounded the situation, leaving both pilots without an ATS when operating in an area serviced by Brize Norton LARS (**CF1**). Members

[2] (UK) SERA.3205 Proximity.
[3] (UK) SERA.3210 Right-of-way (c)(1) Approaching head-on.

wondered if there had been a radio fitted in the Tiger Moth, as they also noted that the pilot had had their transponder turned off. A brief discussion about the fitting of avionics in aircraft such as this ensued, and members acknowledged the potential for limited power supplies to equipment such as transponders and radios dependent upon how the equipment was installed.

The Board furthered their conversation by moving on to the subject of EC devices and members agreed that, even if an EC device could not be permanently installed, a portable device could improve situational awareness for the user. Members were disappointed to note that neither pilot had carried an EC device.

When considering the risk involved in this event, members agreed that neither the Tiger Moth nor the Chipmunk pilot had insufficient information to be situationally aware of the other's aircraft until they had visually acquired sight of each other (**CF2**). The Board agreed that, despite the late sighting by both pilots (**CF3**), the evasive action taken by both the Tiger Moth and Chipmunk pilots combined had been sufficient that the risk of collision had been reduced. However, members agreed that the collision risk had not been fully averted, and that safety had been reduced much below the norm (**CF4**). Consequently, the Board assigned a Risk Category B to this Airprox.

PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK

Contributory Factors:

	2024061			
CF	**Factor**	**Description**	**ECCAIRS Amplification**	**UKAB Amplification**
	Flight Elements			
	• Tactical Planning and Execution			
1	Human Factors	• Communications by Flight Crew with ANS	An event related to the communications between the flight crew and the air navigation service.	Pilot did not request appropriate ATS service or communicate with appropriate provider
	• Situational Awareness of the Conflicting Aircraft and Action			
2	Contextual	• Situational Awareness and Sensory Events	Events involving a flight crew's awareness and perception of situations	Pilot had no, late, inaccurate or only generic, Situational Awareness
	• See and Avoid			
3	Human Factors	• Identification/ Recognition	Events involving flight crew not fully identifying or recognising the reality of a situation	Late sighting by one or both pilots
	• Outcome Events			
4	Contextual	• Near Airborne Collision with Aircraft	An event involving a near collision by an aircraft with an aircraft, balloon, dirigible or other piloted air vehicles	

Degree of Risk: B.

Safety Barrier Assessment[4]

In assessing the effectiveness of the safety barriers associated with this incident, the Board concluded that the key factors had been that:

Flight Elements:

Tactical Planning and Execution was assessed as **partially effective** because neither the Tiger Moth pilot nor the Chipmunk pilot were in receipt of an ATS whilst flying in an area serviced by Brize Norton LARS.

[4] The UK Airprox Board scheme for assessing the Availability, Functionality and Effectiveness of safety barriers can be found on the UKAB Website.

Situational Awareness of the Conflicting Aircraft and Action were assessed as **ineffective** because neither the Tiger Moth pilot nor the Chipmunk pilot were aware of the presence or position of the other aircraft prior to sighting it.

See and Avoid were assessed as **partially effective** because both the Tiger Moth pilot and Chipmunk pilot had late sightings of the other aircraft which had resulted in the need for immediate evasive action by both pilots.